Mrs. Hayden

Name_____ Date_____

202 3.3 and 3.4 Practice Worksheet (many problems come from Glencoe ws)

Determine the slope of the line that contains the given points.

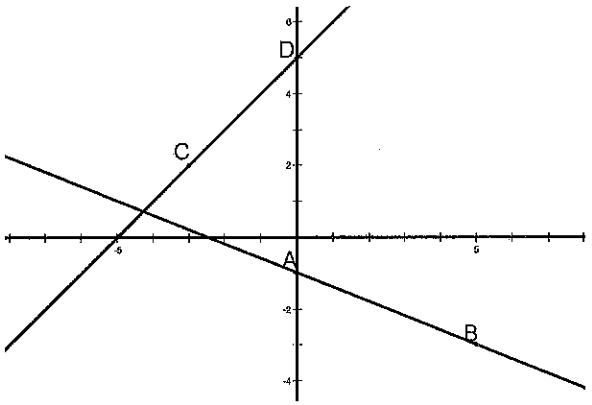
1. B(-4, 4) R(0,2) $m = \frac{4-2}{-4-0} = \frac{2}{-4} = -\frac{1}{2}$

2. S(3, 8) T(3, 5) $m = \frac{8-5}{3-3} =$ undefined

Find the slope of each line.

3. $\overleftrightarrow{CD}$ (-5, 0) (0, 5) $m = \frac{5-0}{0-5} = \frac{5}{5} = 1$

4. $\overleftrightarrow{AB}$ (0, -1) (5, -3) $\frac{-3--1}{5-0} = \frac{-2}{5}$



5. What is the slope of a line parallel to $\overleftrightarrow{AB}$?

$m = -\frac{2}{5}$

6. What is the slope of a line perpendicular to $\overleftrightarrow{AB}$?

$m = \frac{5}{2}$

Determine whether $\overleftrightarrow{KM}$ and $\overleftrightarrow{ST}$ are parallel, perpendicular, or neither.

7. K(-1, -8) M(1, 6) S(-2, -6) T(2, 10)

$\overleftrightarrow{KM}$ $m = \frac{-8-6}{-1-1} = \frac{-14}{-2} = 7$

$\overleftrightarrow{ST}$ $m = \frac{10--6}{2--2} = \frac{16}{4} = 4$

Neither

8. K(-4, 10) M(2,-8) S(1, 2) T(4, -7)

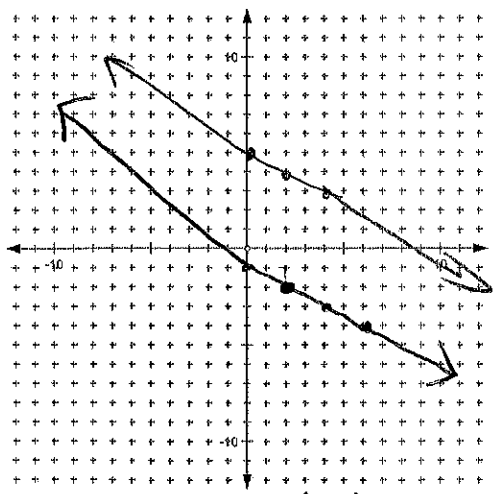
$\overleftrightarrow{KM}$ $m = \frac{10--8}{-4-2} = \frac{18}{-6} = -3$

$\overleftrightarrow{ST}$ $m = \frac{2--7}{1-4} = \frac{9}{-3} = -3$

Parallel

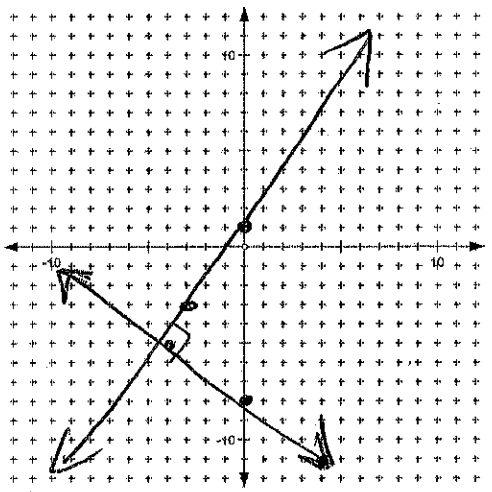
Graph the line that satisfies each condition.

9. m = -1/2 through (2, -2)



9b Graph line parallel w/ y-int 5

10. m = 4/3 (-3, -3)



$m = -\frac{3}{4}$

10b Graph line ⊥ w/ y-int -8

Write the equation of the line in slope intercept form, given the following information.

11. $m = \frac{2}{3}$ (0, -10)

$y = \frac{2}{3}x - 10$

12. Passes through (2, -4) (5, 8)

$m = \frac{8 - -4}{5 - 2} = \frac{12}{3} = 4$

$y = 4x + b$

$8 = 4(5) + b$

$-12 = b$

$y = 4x - 12$

13. passes through (-4, 2) (8, -1)

$m = \frac{2 - -1}{-4 - 8} = \frac{3}{-12} = -\frac{1}{4}$

$y = -\frac{1}{4}x + b$

$2 = -\frac{1}{4}(-4) + b$

$2 = 1 + b$ $\quad b = 1$

$y = -\frac{1}{4}x + 1$

14. Passes through (5, 2) (5, 6)

$m = \frac{6-2}{5-5} = \frac{4}{0}$ undefined vertical

$x = 5$

15. passes through (6, 3) (-5, 3)

$m = \frac{3-3}{6-5} = 0$ horizontal

$y = 3$

16. Write #12 in standard form. $4x - y = 12$

Write #13 in standard form. $x + 4y = 4$

$4\left(\frac{1}{4}x + y = 1\right)$

$x + 4y = 4$

17. Perpendicular to y = 3x + 10 passing through (6, 3).

$m = -\frac{1}{3}$

$y = -\frac{1}{3}x + b$

$3 = -\frac{1}{3}(6) + b$

$3 = -2$

$5 = b$

$y = -\frac{1}{3}x + 5$

Write the equation of the line in point-slope form with the given conditions.

18. m = 2; (-5, 4)

$y - y_1 = m(x - x_1)$

$y - 4 = 2(x + 5)$

19. m=-8; (6, -3)

$y + 3 = -8(x - 6)$